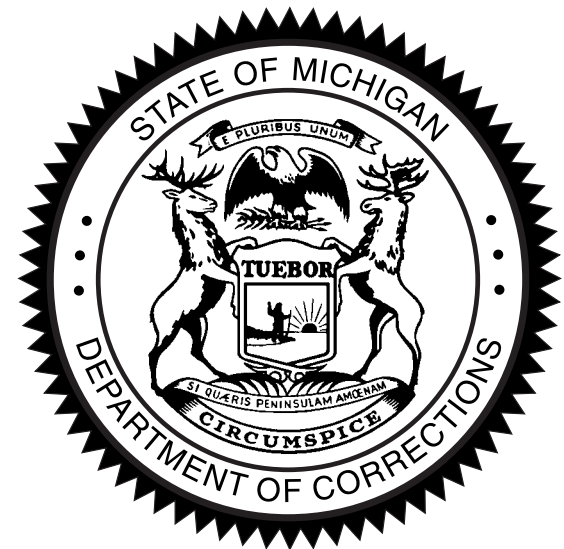


CONSTRUCTION HANDBOOK FOR JAILS AND LOCKUPS



**MICHIGAN DEPARTMENT OF CORRECTIONS
PLANNING AND COMMUNITY DEVELOPMENT
ADMINISTRATION
COUNTY JAIL SERVICES SECTION
Lansing, Michigan**

**Third Edition:
December 2006**

NOTES

MICHIGAN DEPARTMENT OF CORRECTIONS

Patricia L. Caruso, Director

Dennis S. Schrantz, Deputy Director, Planning & Community Development
Administration

Kenneth Brzozowski, Administrator, Office of Community Corrections

Jack S. Kann, Manager, County Jail Services Section

Questions pertaining to the handbook should be addressed to the:

Department of Corrections

County Jail Services Section

P.O. BOX 30003

Lansing, Michigan 48909

- (Q) When sealant is applied in inmate occupied areas it should be abuse resistant sealant.
- (R) Shower floors should have a non-slip surface and the design should ensure that the shower water does not drain into living areas.
- (S) Double-bunking shall not exceed 75% of the total rated design of the facility(s) as required by M.C.L.A. 791.262B.
- (T) A door position switch and door position indicator should be provided for all doors equipped with power operated locks.
- (U) Door stops should be provided for all detention doors and placed to maintain a minimum of 6" between the leading edge of the door and the wall.
- (V) The total dormitory capacity should not exceed 40% of the rated design capacity of the facility(s).
- (W) Design and construction should preclude direct vision into inmate occupied areas by the public. Construction materials, fixtures, and furnishings should be appropriate to the desired level of security.

Conclusion:

This handbook is distributed as a guide to provide consistent information for constructing or renovating your facility. It will be updated periodically to remain current with new security construction innovations and statutes.

Prior to new jail construction and or renovations, the County is encouraged to consider the American Correctional Association Standards for Construction. Jail Administrators and sheriffs should also be reminded that all renovations, additions, and new construction must conform to all applicable federal, state, and local building codes and fire safety codes required by the Department of Labor and Economic Growth.

Revised: December 2006

General Index

<u>Subject</u>	
Administrative and clerical space	11
Artificial lighting levels	12
Classification area	11
Conclusion	14
Control center.....	5
Corrections officer duty station.....	5
Day rooms	10
Definitions.....	2
Detoxification cell.....	3
Drains	13
Electric operated hardware.....	13
Elevator	11
Emergency electrical power equipment	12
Exits	11
Fasteners	13
Food preparation and service area	9
Glass.....	13
Heating and ventilation systems	12
High security areas.....	5
Holding cells	4
Housing	5
Joints	13
Laundry	10
Light controls, conduit and lighting fixtures.....	12

Low security areas	8
Medical examination and treatment room	11
Medium security areas.....	7
Mop sinks	13
Multipurpose room	10
Natural light/windows	13
Openings.....	13
Outside exercise area	10
Phones.....	13
Plans and Specifications	2
Plumbing Space	13
Processing area	3
Processing storage	4
Program areas	11
Public lobby and waiting area	9
Safety vestibule.....	2
Security garage	2
Security perimeter walls	11
Security systems	12
Space allocation.....	2
Visiting accommodations	9
Water	12

- (G) A drain located to reduce the incidence of malicious tampering and flooding. Except where specified, a drain should not be located in a cell. A drain cover should be securely anchored to preclude an inmate using it as an assault weapon. A floor should be properly pitched to a drain.
- (H) Sufficient mop sinks conveniently located to insure proper janitorial service within and outside a security area.
- (I) Plumbing space and mechanical access doors should be constructed and secured with locks to commensurate to the security sought to be achieved.
- (J) Phones in detoxification cells and holding cells should be institutional type and with a built-in speaker and not equipped with cords or cable.
- (K) Natural light accessible to all inmates. Exterior windows in an inmate occupied area should be designed to preclude direct vision into an inmate occupied area from the outside. Windows in an inmate occupied area should be equipped with security glazing and security screen. Operable windows should also be covered by an insect screen.
- (L) All electric operated hardware that provide for manual key override. Electric hinges should be equipped with concealed wires so that electric parts are not exposed when hinge is installed.
- (M) Glass should be appropriate for the security level and meet the required testing standards.
- (N) Tamper proof fasteners should be installed on all hardware inside the inmate occupied areas.
- (O) All openings/ducts/pipes etc. passing from secured to outside or unsecured spaces which are greater than 8 inch diameter sphere should be equipped with security bars (5/8 inch round on 6" centers).
- (P) All joints 1/32" and larger shall be filled with abuse resistant sealant.

Other Design Objectives.

A facility should be designed to include:

- (A) Security systems. All security areas in a facility should have a built-in two-way audio electronic monitoring system designed and constructed with consideration for noise levels, i.e. intercom placement. CCTV monitors should be used only to assist with inmate identification and movement. Monitors should be placed to prevent viewing by unauthorized persons and located in a manner which preserves the dignity of the inmates by not permitting the monitoring of shower/toilet areas and clothing changing areas. Two-way audio communication capability should be provided between any remotely controlled security gate or door and its control point.
- (B) Light controls, conduit and lighting fixtures which are out of reach of inmates in high and medium security areas.
- (C) Sufficient artificial lighting levels to observe a person approaching entrances, exits, and the entire exterior perimeter during hours of darkness. Artificial lighting should be of sufficient intensity to clearly illuminate cells and corridors for observation purposes at all times and to permit an inmate to read in his/her cell. Lighting should follow standards established by the illuminating engineers' society and the manufacturers rating for the security level desired.
- (D) Emergency electrical power equipment for quick recovery to maintain essential services, security and safety and inaccessible to the public. Emergency power should have automatic switch-over capability and supply electricity for entrance light, exit signs, corrections officer and inmate corridors, fire alarm, and electrically operated locks. Emergency power should also provide electricity for the emergency ventilation unit if operable windows are not provided.
- (E) Heating and ventilation systems are designed to control odors and to provide temperatures within the normal comfort zone.
- (F) Both hot and cold water available to each cell.

CONSTRUCTION HANDBOOK FOR JAILS AND LOCKUPS

This handbook was developed by the Michigan Department of Corrections, County Jail Services Section to provide counties with consistent information for constructing or renovating jails or lockups. The Department's goal is to provide current information that will assist the counties in building a safe and secure jail or lockup. In addition, we hope the handbook will assist the counties when designing space allocation as it relates to the operation of the facility.

This handbook is also used by the Michigan Department of Corrections, County Jail Services Section, when reviewing plans and specifications regarding new jail construction and providing a written letter of opinion to the counties. The Department is required by M.C.L.A. 45.16 to carefully examine and file an opinion of jail plans with the county clerk prior to any plan being determined, accepted or contracted for. When planning a new jail, counties may find it beneficial to share this handbook with correctional consultants, jail architects, and contractors.

Revised Statutes of 1846 (excerpt) County Buildings

45.16 County courthouse, jail, offices, and other buildings; location, construction, maintenance, and expense thereof; examination of plan for jail.

Sec. 16. Each organized county shall, at its own cost and expense, provide at the county seat thereof a suitable courthouse, and a suitable and sufficient jail and fireproof offices and all other necessary public buildings, and keep the same in good repair. However, and notwithstanding the provisions of section 11 of Act No. 156 of the Public Acts of 1851, as amended, being section 46.11 of the Compiled Laws of 1948, a jail may be located anywhere in the county. Before the plan of any jail which has been duly authorized to be built shall be determined or accepted, or contracted for, the plan shall be submitted to the Department of Corrections for its examination and opinion, and such department shall carefully examine and give the benefit of its study and experience in such matter to the counties submitting such plans and report its opinion to the county clerk of the county so submitting plans.

No contract for the erection of any county jail shall be valid or binding, nor shall any money be paid out of the county treasury for the construction of a jail until such opinion has been filed with the county clerk of the county submitting such plans.

Upon issuance of an opinion from the Michigan Department of Corrections County Jail Services Section, the project may be released for bids.

Plans and Specifications

Counties should submit plans and specifications 1/8" scale or larger at the following stages in order for the Department to provide a written opinion as required by M.C.L.A. 45.16.

- (A) At completion of design development phase.
- (B) At completion of construction document phase.

Definitions

"Facility" means a jail or lockup under the jurisdiction of the County Sheriff.

Space Allocation

Space should be allocated for but not limited to the following functions:

- (A) Security garage which should be located inside or abutting the facility from which inmates may board or disembark from a transportation vehicle. Space should be sufficient to accommodate anticipated transportation vehicles. Storage for weapons should be provided in the security garage. Storage for supplies, materials, equipment, and vehicles should be separate from the security garage.
- (B) A safety vestibule which allows inmates to enter from the security garage into the facility. The entrance should allow for passage of a loaded ambulance cot between interlocking doors. The safety vestibule(s) should also be constructed to allow a corrections officer to observe and identify a person approaching the secure

A facility may provide a multipurpose room instead of an outside exercise area when the multipurpose room is combined into an inside/outside exercise and activity area.

- (Q) Medical examination and treatment room located in the security area should be equipped with a toilet, hot and cold running water, and consideration given to elbow/foot controlled faucets. Lockable storage for medical supplies should be provided. Consideration should be given to a negative pressure room.
- (R) Administrative and clerical space should be located outside the inmate occupied area.
- (S) Security perimeter walls should be constructed of reinforced concrete with a minimum of #4 bars at 12" on center each way or 8" hollow masonry units with a minimum of #4 bars at 16" on center each way and the cores filled solid with concrete grout or other approved methods. The security perimeter should not be compromised by building the facility in conjunction with other governmental buildings; instead, the facility should be designed and maintained as a special security unit.
- (T) Inmate classification area where staff can talk confidentially with inmates.
- (U) Inmate program areas to provide available counseling, education, etc.
- (V) An elevator for a building of two stories or more should be provided and should be large enough to accommodate a loaded ambulance cot and equipped with electronic camera(s) which are continuously monitored in the officer's duty station.
- (W) Exit(s) which are clearly marked should be provided to ensure timely evacuation of inmates and staff in the event of fire or other emergency to a supervised hazard free area. Two separate exits in multi-level buildings should be provided by properly enclosed one hour rated stair shafts.

Where maximum supervision is required, visitors can be kept physically separate from inmates at all times. For all other cases, such as for law enforcement officers, attorneys, clergy, and probation and parole agents, a contact visiting area should be provided with continuous visual observation by staff.

- (M) Laundry to provide clean clothing, bedding, and supplies. In lieu of a laundry, an acceptable vendor contract may be maintained. When a laundry is maintained, space for soiled clothing storage, clean laundry storage and laundry supply storage should be provided. Equipment should be rated and sized to meet the facility needs. A hand washing lavatory and a toilet should be provided in the laundry area.
- (N) Day rooms when provided in medium and low security housing units should be 20 square feet of floor area per inmate. If the cell is constructed to comply with the double bunking statute (MCLA 791.262b), 40 square feet for each doubled bunked cell will be required in the day room. If the cell is constructed to comply with the multiple occupancy statute (MCLA 791.262c), 20 square feet per inmate in the day room will be required. Day rooms should be directly accessible from the cell or room and provide sufficient seating and writing surfaces. If the day room is not directly accessible from the cell or room, group toilet facilities should be provided with some form of modesty panel.
- (O) Multipurpose room of not less than 200 square feet of floor space when the facility capacity is 35 or less and not less than 600 square feet for each 100 inmates, or fraction thereof, when the facility capacity is more than 35.
- (P) Outside exercise area which allows visual privacy from the public. The area should be enclosed by a 12 foot high double security fence or a single 12 foot high masonry-type wall. The outer perimeter fence should not be less than 6 feet from the interior fence. Fencing should be installed inside fence posts. Fencing should be 2" mesh and provide security against escape and contraband. The footing of the fence should be sufficiently secure to preclude tunneling or caching contraband.

exterior perimeter entrance(s). The vestibule should have interlocking doors.

- (C) Processing area which should be located inside the inmate occupied area, but away from the inmate living area, should include space for booking, identification, photographing, fingerprinting, strip searches, showering, and dressing of inmates.
- (D) Detoxification cells which are used to temporarily detain chemically impaired persons during the detoxification process. The facility should provide detoxification cells for males and females separately and simultaneously. Each detoxification cell should be equipped with a raised bunk slab 27" wide and at least 8" but not more than 18" high. The cell should contain a prison-type combination water closet/lavatory/drinking fountain, angle jet type. All doors and frames should be at least 14 gauge metal. Permanent modesty panels should be provided that are securely fastened to the wall and floor. Top, edges, and corners radiused or beveled to minimize injury to an inmate and sloped to deter an inmate from standing on the modesty panel. A food pass with a door should be provided. Sprinkler heads should be recessed if required. A prison-type 4" flushing floor drain should be provided. The floor should be properly pitched to drain. A plumbing fixture should have outside water shutoff and controls, individually by cell. The number of cells should be determined by the anticipated maximum number of chemically impaired persons received at any one time but each should have at least 52 square feet of floor area. The cell floor and bunk slab should be covered with a nonskid surface which should be durable and easily cleanable. Edges and corners on projecting surfaces should be rounded. Walls should be of reinforced concrete with a minimum of #4 bars at 12" on center each way or 8" hollow masonry units with a minimum of #4 bars at 16" on center each way and the cores filled solid with concrete grout or other approved methods. All detoxification cells should be located near an officer duty station. It should be constructed to provide personal visual observation of the detoxification cell from the officer's duty station and to materially reduce noise. Personal visual observation may be accomplished by electronic camera(s) which are continuously monitored in the officer's duty station. Light fixtures should be maximum security type as rated by the manufacturer.

Consideration should be given to negative pressure cells to aid in the prevention of airborne pathogens.

- (E) Holding cells which are used to temporarily detain male and female inmates separately and simultaneously pending booking, court appearance, identification, housing assignment or discharge. A detoxification cell may also be used for this purpose. A facility should provide one or more holding cells with not less than 150 square feet of floor space or not less than 15 square feet per inmate, excluding benches. Corners and edges of benches should be rounded. Sprinkler heads should be recessed if required. Sufficient number of prison-type combination water closets/lavatories/drinking fountains, angle jet type, should be provided. All doors and frames should be at least 14 gauge metal. Permanent modesty panels should be provided that are securely fastened to the wall and floor. Top, edges, and corners radiused or beveled to minimize injury to an inmate and sloped to deter an inmate from standing on the modesty panel. A holding cell should have one or more prison-type 4" flushing floor drains. A plumbing fixture should have outside water shutoff, individually by cell. The floor should be constructed of nonskid material which is durable and easily cleanable. Walls should be of reinforced concrete with a minimum of #4 bars at 12" on center each way or 8" hollow masonry units with a minimum of #4 bars at 16" on center each way and the cores filled solid with concrete grout or other approved methods. All holding cells should be located near an officer duty station. A food pass with a door should be provided. The holding cells should be constructed to provide personal visual observation of the entire holding cell from the officer's duty station and to materially reduce noise. Personal visual observation may be accomplished by electronic camera(s) which are continuously monitored in the officer's duty station. Light fixtures should be maximum security type as rated by the manufacturer. Consideration should be given to negative pressure cells to aid in the prevention of airborne pathogens.
- (F) Processing storage areas for inmate property, inmate's personal effects, and inmate uniforms, towels, bedding linen and other related items. Additional mattresses should be kept in the facility for which off floor storage should be provided.

not less than 16 gauge steel. Low security doors should be equipped with not less than a heavy duty mortise or unit lock set and ball bearing hinges or pivots.

- (5) Walls should be constructed of durable materials that are easy to clean.
- (6) Floors should be of reinforced concrete and should be covered with a material with high resistance to wear and moisture.
- (7) Grills, louvers and faceplates should be securely anchored with tamper resistant fasteners.

Walls between different security classification levels should be as secure as the higher classification. Light, soft-toned paint should be used.

- (J) Food preparation and service area including space for efficient receiving, storage, processing, preparation, cooking, baking, serving, dish washing and sanitizing, cleaning, menu preparation, record keeping, staff (civilian and inmate) restroom and maintenance. A kitchen should not be designed as a passage way for non-food handling persons.
- (K) Public lobby or waiting area should be separate and secure from the operation of the facility such that the public should not have uncontrolled access to the inmate occupied areas. A main entrance to the lobby should be provided for public access. The public accommodations should be barrier free. The design and construction should preclude direct vision into inmate occupied areas by the public.
- (L) Visiting accommodations near a control room or corrections officer duty station. The visiting area should be designed to provide flexibility in the degree of physical security and supervision commensurate with security needs of classified inmates. A tack weld should be applied to security screws on the window frame fasteners.

- (6) Grills, louvers and faceplates should be 14 gauge steel construction with no exposed fasteners.
- (7) Floors should be of reinforced concrete and should be covered with a material with high resistance to wear and moisture.
- (8) A safety vestibule of sufficient size to permit passage of a loaded ambulance cot between interlocking doors should be provided at the entrance of the inmate living area. The safety vestibule should provide full visibility of the areas from which a person enters or leaves the vestibule.
- (9) Sprinkler heads should be recessed if required.
- (10) Light fixtures should be medium security type as rated by the manufacturer.

Low security areas should have:

- (1) Cells with not less than 52 square feet of floor space when a day room is available and directly accessible from the room. If a day room is not provided, a low security room, excluding corridors, should not have less than 72 square feet of floor space. The double bunking statute (MCLA 791.262b) requires that a cell provide a minimum of 65 square feet of floor area and additional day room space (see item (N) of handbook). The multiple occupancy statute (MCLA 791.262c) requires that a cell provide 52 square feet of sleeping area per inmate and additional day room space (see item (N)).
- (2) A bed, writing surface, chair, mirror, locker, hooks or hangers, and a shelf or drawer should be provided.
- (3) Gang-type toilets and showers may be used with some form of modesty panels.
- (4) A low security door should be of not less than 18 gauge reinforced hollow metal, or solid core laminated plastic, side hinged or pivoted, hung in a hollow metal frame of

- (G) Control center for controlling all security systems. The main control center should be protected so as to be inaccessible to inmates and unauthorized persons under all foreseeable circumstances, and include a bathroom equipped with a toilet and washbasin.
- (H) Corrections officer duty stations. Not less than one corrections officer duty station should be provided for a corrections officer on each floor and in each direct supervision housing unit to permit officers to see or hear and respond to emergencies. At least one corrections officer duty station should be located outside the inmate occupied area and should be inaccessible to inmates and unauthorized persons under all foreseeable circumstances. The control center may serve as one correction officer duty station.
- (I) Housing for inmates should be constructed to comply with current statute concerning multiple occupancy housing units and double bunking of individual cells. Housing for inmates in maximum security should be constructed so that each inmate has an individual cell. Not less than 10% of the total rated design capacity of the facility(s) should be high security cells.

High security areas should have:

- (1) Cells with not less than 72 square feet of floor space. A prison-type combination water closet/lavatory/drinking fountain, angle jet type should be provided. A rigidly constructed perforated steel-bottomed metal bed, a steel table, seat, and a mirror should also be provided and securely fastened to the floor or wall.
- (2) A shower located inside the housing unit.
- (3) A high security door of sliding bar grillwork where maximum vision is required and of sliding or hinged 14 gauge reinforced hollow metal or 1/4" minimum hinged steel plate elsewhere. In new construction, security glazing should be included in doors and windows.

- (4) Sliding doors should have tracks and guides inaccessible to inmate living areas and should be equipped with a locking device which permits them to be remotely opened and closed and locked and unlocked, either individually or collectively.
- (5) High security doors should be equipped with a maximum security lock, a door closer located on the outside of the cell, and ball bearing fast-pin prison-type hinges. Hardware for high security doors should be of a type designed for prison or maximum security use and swing outward.
- (6) Walls should be of reinforced concrete with a minimum of #4 bars at 12" on center or 8" hollow masonry units with a minimum of #4 bars at 16" on center each way and the cores filled solid with concrete grout or other approved methods.
- (7) Floors should be of reinforced concrete and should be covered with a material that has high resistance to wear and moisture.
- (8) A corrections officer corridor should separate an inmate living area from any exterior wall in which window(s) or openings occur. A corridor should be not less than 5 feet wide and permit the free passage of all movable equipment within the facility.
- (9) A safety vestibule of sufficient size to permit passage of a loaded ambulance cot between interlocking doors should be provided at the entrance of the inmate living area. The safety vestibule should provide full visibility of the areas from which a person enters or leaves the vestibule.
- (10) A food pass with a door should be provided.
- (11) Sprinkler heads should be recessed if required.
- (12) Light fixtures should be maximum security type as rated by the manufacturer.

- (13) Grills, louvers and face plates should be a minimum of 14 gauge steel construction with no exposed fasteners.

Medium security areas should have:

- (1) Cells that have not less than 52 square feet of floor space when an activity area is available and directly accessible from the cell. If an activity area is not provided, a medium security cell, excluding the corridor, should not have less than 72 square feet of floor space. The double bunking statute (MCLA 791.262b) requires that a cell provide a minimum of 65 square feet of floor area and additional day room space (see item (N) of handbook). The multiple occupancy statute (MCLA 791.262c) requires that a cell provide 52 square feet of sleeping area per inmate and additional day room space (see item (N)). A prison-type water closet/lavatory/drinking fountain, angle jet type should be provided. A rigidly constructed perforated steel-bottomed metal bed, a steel table, seat, and a mirror should also be provided and securely fastened to the floor or wall.
- (2) A shower located inside the housing unit.
- (3) A medium security door should be of not less than 16 gauge reinforced hollow metal, side hinged or pivoted, hung in a 12 gauge specially reinforced hollow metal frame. Doors should be equipped with not less than a heavy duty mortise or unit lock set, a door closer located on the outside of the cell, and ball bearing fast-pin hinges or pivots.
- (4) Doors should swing outward and be equipped with a locking device which permits them to be remotely locked and unlocked, either individually or collectively.
- (5) Walls should be of concrete masonry units reinforced with #5 reinforcing rods every 16" on vertical centers or other approved methods.